AMENDMENTS TO THE CLAIMS

We claim:

1. (Currently Amended) A process for preparing 1,6-hexanediol ~~having a purity of ≥ 99.5% by weight by~~ comprising catalytically dimerizing acrylic esters and catalytically hydrogenating the hexenedioic diesters obtained in this way to 1,6-hexanediol by:

a) dimerizing C_1- to C_8-acrylic esters in the presence of at least one rhodium compound to give mixtures of predominantly 2- and 3-hexenedioic diesters[,];

b) hydrogenating the resulting dimerizing effluent in the presence of chromium-free catalysts comprising predominantly copper as the hydrogenation component; and

c) purifying the crude 1,6-hexanediol obtained in this way by fractional distillation[.];

wherein the 1,6-hexanediol so prepared has a purity of at least 99.5% by weight.

2. (Currently Amended) ~~A~~The process as claimed in claim 1, wherein unconverted acrylic ester is removed from the dimerization mixture before the hydrogenation.

3. (Currently Amended)~~A~~ The process as claimed in ~~either of claims 1 or 2~~ claim 1, wherein the acrylic ester used is methyl acrylate.

4. (Currently Amended) ~~A~~ The process as claimed in ~~any of claims 1 to 3~~claim 1, wherein the hydrogenation is carried out over a catalyst which in the oxidic form has the composition

$Cu_aAl_bZr_cMn_dO_x$

where a > 0, b > 0, c ≥ 0, d > 0, a > b/2, b > a/4, a > c and a > d, and x is the number of oxygen atoms required per formula unit to preserve electronic neutrality.

5. (Currently Amended) ~~A~~The process as claimed in ~~any of claims 1 to 4~~claim 1, wherein the dimerization is carried out at from –100 to 150°C and at pressures of from 0.1 to 1 atm.

6. (Currently Amended) ~~A~~ The process as claimed in ~~any of claims 1 to 5~~claim 1, wherein the hydrogenation is carried out at from 100 to 350°C and at pressures of from 30 to 350 bar.

7. (New) The process according to claim 2, wherein the acrylic ester used is methyl acrylate.

8. (New) The process according to claim 2, wherein the hydrogenation is carried out over a catalyst which in the oxidic form has the composition

$Cu_aAl_bZr_cMn_dO_x$

where a > 0, b > 0, c ≥ 0, d > 0, a > b/2, b > a/4, a > c and a > d, and x is the number of oxygen atoms required per formula unit to preserve electronic neutrality.

9. (New) The process according to claim 3, wherein the hydrogenation is carried out over a catalyst which in the oxidic form has the composition

$Cu_aAl_bZr_cMn_dO_x$

where a > 0, b > 0, c ≥ 0, d > 0, a > b/2, b > a/4, a > c and a > d, and x is the number of oxygen atoms required per formula unit to preserve electronic neutrality.

10. (New) The process according to claim 2, wherein the dimerization is carried out at from –100 to 150°C and at pressures of from 0.1 to 1 atm.

11. (New) The process according to claim 3, wherein the dimerization is carried out at from –100 to 150°C and at pressures of from 0.1 to 1 atm.

12. (New) The process according to claim 4, wherein the dimerization is carried out at from –100 to 150°C and at pressures of from 0.1 to 1 atm.

13. (New) The process according to claim 2, wherein the hydrogenation is carried out at from 100 to 350°C and at pressures of from 30 to 350 bar.

14. (New) The process according to claim 3, wherein the hydrogenation is carried out at from 100 to 350°C and at pressures of from 30 to 350 bar.

15. (New) The process according to claim 4, wherein the hydrogenation is carried out at from 100 to 350°C and at pressures of from 30 to 350 bar.

16. (New) The process according to claim 5, wherein the hydrogenation is carried out at from 100 to 350°C and at pressures of from 30 to 350 bar.